

SEQUENCE LISTING

<110> Walke, D. Wade
 Hilbun, Erin
 Scoville, John
 Friddle, Carl Johan
 Hu, Yi
 Turner, C. Alexander Jr.

<120> Novel Human Proteases and Polynucleotides Encoding the Same

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<150> US 60/227,104
<151> 2000-08-22

<150> US 60/233,796
<151> 2000-09-19

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Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile			
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Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu			
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65 70 75 80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125
Val Pro Gly Ser Ser Val Glu Trp Glu Asp Phe Arg Glu Leu Phe
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145 150 155 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
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Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
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225 230 235 240
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
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Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
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Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
195 200 205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
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Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
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 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
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 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
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 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
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 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
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 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
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 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
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 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Ser Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp

625	630	635	640
Asp Asp Ala Gln	Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly		
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Asp Val Val	Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser		
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Tyr Arg Asp Pro	Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val		
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Gly Cys Asp Lys	Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly		
	690	695	700
Val Cys Gly Gly	Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu		
	705	710	715
Gly Lys Ala Ser	Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro		
	725	730	735
Ala Gly Ala Arg	His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His		
	740	745	750
Arg Ser Val Val	Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro		
	755	760	765
Lys Gly Lys Glu	Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu		
	770	775	780
Trp Glu Asp Ala Val	Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly		
	785	790	795
Pro Leu Pro Glu	Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly		
	805	810	815
Gly Pro Arg Ser	Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu		
	820	825	830
Leu Pro Leu Ile	Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr		
	835	840	845
Tyr Glu Trp Ala	Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly		
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Gly Gly Ile Gln	Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His		
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His Met Val Gln	Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro		
	885	890	895
Ile Arg Arg Arg	Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val		
	900	905	910
Thr Glu Glu Trp	Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val		
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Gln Thr Arg Gly	Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His		
	930	935	940
Lys Val Met Pro	Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg		
	945	950	955
Arg Pro Cys	Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala		
	965	970	975
Trp Ser Gln Cys	Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln		
	980	985	990
Val Val Cys Arg	Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp		
	995	1000	1005
Arg Pro Asp Thr	Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn		
	1010	1015	1020
His Gln Asn Ser	Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro		
	1025	1030	1035
Glu Gly Gln Trp	Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys		
	1045	1050	1055
Ile Ser Ser Met	Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val		
	1060	1065	1070
Phe Cys Gln Met	Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr		
	1075	1080	1085
His Arg Leu Cys	Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn		
	1090	1095	1100
Pro Gly Pro Asp	Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro		
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Gly Ser Pro Leu	Pro Gly Pro Gln Asp Pro Ala Asp Ala Glu Pro		
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<211> 3660
<212> DNA
<213> homo sapiens

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CGGAGCTGT	GAAAGCTGGG	GGTGAGACA	CGGGGGATAC	AGTCCTGT	GCCCCCTCTCC	2820
AATGGAACCC	ACAAAGTCAT	GCCGGGACCA	GGGACGGC	TGAGGCCCCA	TGAGGCCCGA	2880
CGGCCCTGTC	TCCGAGTGC	CTGGCCCGCC	CAGTGGAGGC	TGGAGGCTG	GTCCCAGTGC	2940
TCTGCCACCT	GTGGAGAGGG	CATCCAGCAG	CGGCAGGTG	TGTGAGGAC	CAACGCCAAC	3000
AGCTCTGGC	ATTGCGAGGG	GGTAGGCCA	GACACTGTG	AGGTCTGCA	CTCTGGCCGC	3060
TGTGGAGGAA	ATCACCGAA	CTTCACCGT	AGGGCCGATG	TCTGGAACT	TGGGACGCCA	3120
GAGGGCAGT	GGGTGCCACA	ATCTGRACCC	CTACATCCCA	TTAACAAAGAT	ATCATCAACG	3180
GAGGCCCTGCA	CGGGAGACAG	GTCTGTTTC	TGCGCATGG	AAGTGTCTGA	TGCTACTGC	3240
TCCATTCCCG	GCTACCAACCG	GCTCTGTGT	GTGTGCTGCA	TCAAAGGGC	CTCGGGCCCC	3300
AACCCCTGGC	CAAGACCTGG	CCAAACCTCA	CTGCCCCCTC	TTCCTACTGC	TGAAAGCCCC	3360
TTACCAAGGAC	CCCAAGGACCC	TGCAAGATGT	GCAGAGGCTC	CTGGAAGGCC	AACGGGATCA	3420
GAGGACCATC	AGCATGGCC	AGCCACACAG	CTCCAGGAG	CTCTGGATAC	AAGCTCCCCA	3480
GGGGACCCAGC	ATCCCTTTC	CCCTGAGACA	CAAACTCTG	GAGCATCTGC	GAGCATCTCC	3540
CTACCAAGGCC	CCCGGGGGCT	GCCTTGGGC	TGGAACCTAGA	CACCTACGCC	AGTCCTGTAG	3600
GACAAAGGCC	AACCTGGAGA	AGACCTGAGA	CCTGCCCGG	CGGCCGCTG	AGCCCTATAAG	3660

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<212> PRT
<213> homo sapiens

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Ala Leu Cys Thr Ala Ala Gly Ser Arg Thr Pro Glu Leu His Leu Ser						
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe						
35	40	45				
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser						
50	55	60				
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser						
65	70	75	80			
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu						
85	90	95				
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val						
100	105	110				
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val						
115	120	125				
Val Pro Gly Ser Ser Val Glu Trp Glu Glu Asp Phe Arg Glu Leu Phe						
130	135	140				
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly						
145	150	155	160			
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly						
165	170	175				
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg						
180	185	190				
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg						
195	200	205				
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His						
210	215	220				
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val						
225	230	235	240			
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro						
245	250	255				
Gly Ser Tyr Ser Ile Glu Val Leu Val Val Asp Asp Ser Val Val						
260	265	270				
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met						
275	280	285				
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile						
290	295	300				
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Gln Ser Leu						

305	310	315	320
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys			
325	330	335	
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His			
340	345	350	
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly			
355	360	365	
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu			
370	375	380	
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr			
385	390	395	400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala			
405	410	415	
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala			
420	425	430	
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg			
435	440	445	
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala			
450	455	460	
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu			
465	470	475	480
Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe			
485	490	495	
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn			
500	505	510	
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu			
515	520	525	
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser			
530	535	540	
Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys			
545	550	555	560
Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser			
565	570	575	
Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu			
580	585	590	
Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly			
595	600	605	
Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr			
610	615	620	
Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp			
625	630	635	640
Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly			
645	650	655	
Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser			
660	665	670	
Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val			
675	680	685	
Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly			
690	695	700	
Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu			
705	710	715	720
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro			
725	730	735	
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His			
740	745	750	
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro			
755	760	765	
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu			
770	775	780	
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly			
785	790	795	800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly			
805	810	815	

Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
 900 905 910
 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
 995 1000 1005
 Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
 1010 1015 1020
 His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
 1025 1030 1035 1040
 Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys
 1045 1050 1055
 Ile Ser Ser Thr Glu Pro Cys Thr Gly Asp Arg Ser Val Phe Cys Gln
 1060 1065 1070
 Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu
 1075 1080 1085
 Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro
 1090 1095 1100
 Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro
 1105 1110 1115 1120
 Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys
 1125 1130 1135
 Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro
 1140 1145 1150
 Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro
 1155 1160 1165
 Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Thr Thr Pro
 1170 1175 1180
 Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Glu
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 <211> 3651
 <212> DNA
 <213> homo sapiens

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 acagtgcctt gcagcacaga ctttcgggaa cgcttcctct cccacgtgg gtctggccca
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60
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 180
 240

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<212> PRT
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 Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe
 35 40 45
 Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ser
 50 55 60
 Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
 65 70 75 80
 Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
 85 90 95
 Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
 100 105 110
 Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
 115 120 125
 Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
 130 135 140
 Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
 145 150 155 160
 Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
 165 170 175
 Leu Ile Arg Thr Asp Ser Thr Asp Phe Ile Glu Pro Leu Glu Arg
 180 185 190
 Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
 195 200 205
 Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
 210 215 220
 Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
 245 250 255
 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
 260 265 270
 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
 275 280 285
 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
 290 295 300
 Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
 305 310 315 320
 Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
 325 330 335
 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
 340 345 350
 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
 370 375 380
 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
 485 490 495

Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
 515 520 525
 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
 530 535 540
 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
 705 710 715 720
 Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
 725 730 735
 Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
 740 745 750
 Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
 755 760 765
 Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
 770 775 780
 Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
 785 790 795 800
 Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
 805 810 815
 Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
 900 905 910
 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp

995	1000	1005	
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn			
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His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro			
1025	1030	1035	1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys			
1045	1050	1055	
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val			
1060	1065	1070	
Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr			
1075	1080	1085	
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn			
1090	1095	1100	
Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro			
1105	1110	1115	1120
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro			
1125	1130	1135	
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr			
1140	1145	1150	
Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro			
1155	1160	1165	
Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro			
1170	1175	1180	
Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro			
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Val Pro Asp Leu Pro Gly Arg Pro Leu Glu Pro Tyr Ser Glu Ser Tyr			
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<212> DNA
<213> homo sapiens

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acagtgcctt gcacgcacaga ctttcgggaa cgttccctct cccacgtgtt gtctggccca	180
gcacgcacgtt ctgcggggac catgtgtacg gacacggccac ccacactacc acgacactcc	240
agtccaccttcc gggtggctgc caggccctcg caccggcaggag ggaccctgtg gcctggcagg	300
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gacagcaccgg actttttcat tgagcccttg gagccggggcc agacggagat ggaggccagc	600
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cggccctgtc	tccgagatgc	ctggccggcc	cattggggcc	tgggagccgt	gtccccatgc	3000
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agcctgggg	atttgcgggg	ccatccatgc	gacatgtcc	agggtctcar	cctggccccc	3120
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cttaccaccc	ccggggggct	gcttggggc	tggtactcaga	ccatctaccc	agtccctgac	3642
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<212> PRT
<213> homo sapiens

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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe
35 40 45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
50 55 60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65 70 75 80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100 105 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
130 135 140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
145 150 155 160
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
165 170 175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
180 185 190

Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
 195 200 205
 Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
 210 215 220
 Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
 245 250 255
 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
 260 265 270
 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
 275 280 285
 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
 290 295 300
 Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
 305 310 315 320
 Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
 325 330 335
 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
 340 345 350
 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
 370 375 380
 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
 485 490 495
 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
 515 520 525
 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
 530 535 540
 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly

690	695	700
Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu		
705	710	715
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro		720
725	730	735
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His		
740	745	750
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro		
755	760	765
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu		
770	775	780
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly		
785	790	795
800		
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly		
805	810	815
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu		
820	825	830
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr		
835	840	845
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly		
850	855	860
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His		
865	870	875
880		
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro		
885	890	895
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val		
900	905	910
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val		
915	920	925
Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His		
930	935	940
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg		
945	950	955
960		
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala		
965	970	975
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln		
980	985	990
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp		
995	1000	1005
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn		
1010	1015	1020
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro		
1025	1030	1035
1040		
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys		
1045	1050	1055
Ile Ser Ser Thr Glu Pro Cys Thr Gly Cys Arg Ser Val Phe Cys Gln		
1060	1065	1070
Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu		
1075	1080	1085
Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro		
1090	1095	1100
Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro		
1105	1110	1115
1120		
Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys		
1125	1130	1135
Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro		
1140	1145	1150
Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro		
1155	1160	1165
Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Thr Thr Pro		
1170	1175	1180
Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Asp		
1185	1190	1195
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Leu Pro Gly Arg Pro Leu Glu Pro Tyr Ser Glu Ser Tyr
1205 1210

<210> 15
<211> 3708
<212> DNA
<213> homo sapiens

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3	ggccggccgc	62	180
4	acatcggt	63	240
5	gcagcagct	64	300
6	atgcacctt	65	360
7	gtggggccgc	66	420
8	ctcgccggca	67	480
9	cgggaggctg	68	540
10	atgcgtgggg	69	600
11	gacagcaccc	70	660
12	ggggagacac	71	720
13	ggggactctg	72	780
14	ggggaccaggc	73	840
15	atcgagggtc	74	900
16	cagaactatg	75	960
17	ggggtttcata	76	1020
18	acgcctatgc	77	1080
19	tccccggcagc	78	1140
20	ccggcggact	79	1200
21	atgcgtgtcc	80	1260
22	tcggggcgcg	81	1320
23	tcgacaaaggc	82	1380
24	tggatctctg	83	1440
25	cagtggcgct	84	1500
26	ccttggaaagc	85	1560
27	ggccggatgc	86	1620
28	ctggggcgcg	87	1680
29	tcgacaaaggc	88	1740
30	tggatctctg	89	1800
31	cagtggcgct	90	1860
32	ccttggaaagc	91	1920
33	ggccggatgc	92	1980
34	atggggccgc	93	2040
35	atggggatgt	94	2100
36	tggggatctat	95	2160
37	aacccttc	96	2220
38	tcgacaaaggc	97	2280
39	cgaactatgc	98	2340
40	gtatggccgc	99	2400
41	atggggatgt	100	2460
42	tggggatctat	101	2520
43	ggccggatgc	102	2580
44	atggggatgt	103	2640
45	tggggatctat	104	2700
46	ggccggatgc	105	2760
47	atggggatgt	106	2820
48	tggggatctat	107	2880
49	ggccggatgc	108	2940
50	atggggatgt	109	3000
51	tggggatctat	110	3060
52	ggccggatgc	111	3120
53	atggggatgt	112	3180
54	tggggatctat	113	3240

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gaaaggcccc	taccggacc	ccaggacct	gcagatctgt	cagagcctc	tggaaggcca	3420
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gtccctgagg	accaaaggca	actctggaaa	gaccctgagac	atccccgac	cagctccct	3660
gtgtgactgc	ccggggggcc	gccccgagcc	tatagttagt	ctgattag		3708

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<212> PRT
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe						
35 40 45						
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser						
50 55 60						
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser						
65 70 75 80						
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu						
85 90 95						
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val						
100 105 110						
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val						
115 120 125						
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe						
130 135 140						
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly						
145 150 155 160						
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly						
165 170 175						
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg						
180 185 190						
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg						
195 200 205						
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His						
210 215 220						
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val						
225 230 235 240						
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro						
245 250 255						
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val						
260 265 270						
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met						
275 280 285						
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile						
290 295 300						
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu						
305 310 315 320						
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys						
325 330 335						
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His						
340 345 350						
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly						
355 360 365						
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu						
370 375 380						

Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
 485 490 495
 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
 515 520 525
 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
 530 535 540
 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
 705 710 715 720
 Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
 725 730 735
 Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
 740 745 750
 Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
 755 760 765
 Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
 770 775 780
 Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
 785 790 795 800
 Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
 805 810 815
 Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro

885	890	895
Ile Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val		
900	905	910
Thr Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val		
915	920	925
Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His		
930	935	940
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg		
945	950	955
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala		960
965	970	975
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln		
980	985	990
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp		
995	1000	1005
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn		
1010	1015	1020
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro		
1025	1030	1035
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys		1040
1045	1050	1055
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val		
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Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr		
1075	1080	1085
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn		
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Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro		
1105	1110	1115
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro		1120
1125	1130	1135
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr		
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Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro		
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Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro		
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Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro		
1185	1190	1195
Val Pro Glu Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly		1200
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Thr Ser Leu Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Tyr Ser		
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Glu Ser Asp		
1235		

<210> 17
<211> 3699
<212> DNA
<213> homo sapiens

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ccctgc	gc	at	tttgc	ccat	tttgc	1560	
cg	at	gtgt	ccat	tttgc	tttgc	1620	
ggccccc	ttgt	gg	atgt	tttgc	tttgc	1680	
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aaccctcc	cac	ctat	ttgt	tttgc	tttgc	1800	
tgcaac	agg	atgt	ccgc	tttgc	tttgc	1860	
cgcaact	at	atgt	ccgc	tttgc	tttgc	1920	
atggaa	ttgt	tc	gg	tttgc	tttgc	1980	
gat	tc	at	gg	tttgc	tttgc	2040	
g	tc	at	gg	tttgc	tttgc	2100	
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cacat	ttgt	gg	atgt	tttgc	tttgc	2280	
acc	tc	at	gg	tttgc	tttgc	2340	
atgg	ttgt	gg	atgt	tttgc	tttgc	2400	
ccct	tc	at	gg	tttgc	tttgc	2460	
atcg	atcg	cc	at	tttgc	tttgc	2520	
gtgt	atcg	cc	at	tttgc	tttgc	2580	
agg	atcg	cc	at	tttgc	tttgc	2640	
agg	atcg	cc	at	tttgc	tttgc	2700	
tgcaac	acc	atcg	cc	at	tttgc	tttgc	2760
cc	atcg	cc	at	tttgc	tttgc	2820	
at	atcg	cc	at	tttgc	tttgc	2880	
at	atcg	cc	at	tttgc	tttgc	2940	
tct	atcg	cc	at	tttgc	tttgc	3000	
agc	atcg	cc	at	tttgc	tttgc	3060	
tgt	atcg	cc	at	tttgc	tttgc	3120	
g	atcg	cc	at	tttgc	tttgc	3180	
g	atcg	cc	at	tttgc	tttgc	3240	
tcc	atcg	cc	at	tttgc	tttgc	3300	
aacc	atcg	cc	at	tttgc	tttgc	3360	
ttt	atcg	cc	at	tttgc	tttgc	3420	
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gg	atcg	cc	at	tttgc	tttgc	3540	
cctt	atcg	cc	at	tttgc	tttgc	3600	
g	atcg	cc	at	tttgc	tttgc	3660	
g	atcg	cc	at	tttgc	tttgc	3699	

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<211> 1232
<212> PRT
<213> homo sapiens

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20 25 30
Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe

35	40	45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser		
50	55	60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser		
65	70	75
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu		
85	90	95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val		
100	105	110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val		
115	120	125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Gly Leu Phe		
130	135	140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly		
145	150	155
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly		
165	170	175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Ile Glu Pro Leu Glu Arg		
180	185	190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg		
195	200	205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His		
210	215	220
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val		
225	230	235
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro		
245	250	255
Gly Ser Tyr Ser Ile Glu Val Leu Val Val Asp Asp Ser Val Val		
260	265	270
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met		
275	280	285
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile		
290	295	300
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu		
305	310	315
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys		
325	330	335
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His		
340	345	350
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly		
355	360	365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu		
370	375	380
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr		
385	390	395
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala		
405	410	415
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala		
420	425	430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg		
435	440	445
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala		
450	455	460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu		
465	470	475
Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe		
485	490	495
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn		
500	505	510
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu		
515	520	525
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser		
530	535	540

Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
 705 710 715 720
 Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
 725 730 735
 Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
 740 745 750
 Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
 755 760 765
 Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
 770 775 780
 Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
 785 790 795 800
 Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
 805 810 815
 Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
 900 905 910
 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
 995 1000 1005
 Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
 1010 1015 1020
 His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
 1025 1030 1035 1040
 Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys

1045	1050	1055
Ile Ser Ser Thr Glu Pro Cys Thr Gly Asp Arg Ser Val Phe Cys Gln		
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Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu		
1075	1080	1085
Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro		
1090	1095	1100
Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro		
1105	1110	1115
Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys		
1125	1130	1135
Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro		
1140	1145	1150
Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro		
1155	1160	1165
Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Pro Thr Thr Pro		
1170	1175	1180
Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Glu		
1185	1190	1195
Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly Thr Ser Leu		
1205	1210	1215
Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Tyr Ser Glu Ser Asp		
1220	1225	1230

<210> 19
<211> 3759
<212> DNA
<213> homo sapiens

<400> 19

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 <212> PRT
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 Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe
 35 40 45
 Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ser
 50 55 60
 Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
 65 70 75 80
 Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
 85 90 95
 Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
 100 105 110
 Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
 115 120 125
 Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
 130 135 140
 Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
 145 150 155 160
 Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
 165 170 175
 Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
 180 185 190
 Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
 195 200 205

Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
 210 215 220
 Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
 245 250 255
 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
 260 265 270
 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
 275 280 285
 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
 290 295 300
 Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
 305 310 315 320
 Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
 325 330 335
 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
 340 345 350
 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
 370 375 380
 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
 485 490 495
 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
 515 520 525
 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
 530 535 540
 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
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 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu

705	710	715	720
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro			
725	730	735	
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His			
740	745	750	
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro			
755	760	765	
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu			
770	775	780	
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly			
785	790	795	800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly			
805	810	815	
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu			
820	825	830	
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr			
835	840	845	
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly			
850	855	860	
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His			
865	870	875	880
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro			
885	890	895	
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val			
900	905	910	
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val			
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Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His			
930	935	940	
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg			
945	950	955	960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala			
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Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln			
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Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp			
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Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn			
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His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro			
1025	1030	1035	1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys			
1045	1050	1055	
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val			
1060	1065	1070	
Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr			
1075	1080	1085	
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn			
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Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro			
1105	1110	1115	1120
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro			
1125	1130	1135	
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr			
1140	1145	1150	
Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro			
1155	1160	1165	
Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro			
1170	1175	1180	
Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro			
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Val Pro Glu Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly			
1205	1210	1215	

<210> 21
<211> 3750
<212> DNA
<213> homo sapiens

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ccggggccgc	ccggccgaccc	ctggcatctcc	actggcacgt	ttacactctg	tgtaactgccc	3720
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<212> PRT
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe						
35	40	45				
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser						
50	55	60				
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser						
65	70	75	80			
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu						
85	90	95				
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val						
100	105	110				
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val						
115	120	125				
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe						
130	135	140				
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly						
145	150	155	160			
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly						
165	170	175				
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg						
180	185	190				
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg						
195	200	205				
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His						
210	215	220				
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val						
225	230	235	240			
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro						
245	250	255				
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val						
260	265	270				
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met						
275	280	285				
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile						
290	295	300				
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu						
305	310	315	320			
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys						
325	330	335				
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His						

	340	345	350													
His	Asp	His	Val	Val	Phe	Leu	Thr	Arg	Gln	Asp	Phe	Gly	Pro	Ser	Gly	
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Tyr	Ala	Pro	Val	Thr	Gly	Met	Cys	His	Pro	Leu	Arg	Ser	Cys	Ala	Leu	
370							375					380				
Asn	His	Glu	Asp	Gly	Phe	Ser	Ser	Ala	Phe	Val	Ile	Ala	His	Glu	Thr	
385											395				400	
Gly	His	Val	Leu	Gly	Met	Glu	His	Asp	Gly	Gln	Gly	Asn	Gly	Cys	Ala	
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Asp	Glu	Thr	Ser	Leu	Gly	Ser	Val	Met	Ala	Pro	Leu	Val	Gln	Ala	Ala	
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Phe	His	Arg	Phe	His	Trp	Ser	Arg	Cys	Ser	Lys	Leu	Glu	Leu	Ser	Arg	
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Tyr	Leu	Pro	Ser	Tyr	Asp	Cys	Leu	Leu	Asp	Asp	Pro	Phe	Asp	Pro	Ala	
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Trp	Pro	Gln	Pro	Pro	Glu	Leu	Pro	Gly	Ile	Asn	Tyr	Ser	Met	Asp	Glu	
465											470				480	
Gln	Cys	Arg	Phe	Asp	Phe	Gly	Ser	Gly	Tyr	Gln	Thr	Cys	Leu	Ala	Phe	
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Arg	Thr	Phe	Glu	Pro	Cys	Lys	Gln	Leu	Trp	Cys	Ser	His	Pro	Asp	Asn	
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Pro	Tyr	Phe	Cys	Lys	Thr	Lys	Lys	Gly	Pro	Pro	Leu	Asp	Gly	Thr	Glu	
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Cys	Ala	Pro	Gly	Lys	Trp	Cys	Phe	Lys	Gly	His	Cys	Ile	Trp	Lys	Ser	
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Pro	Glu	Gln	Thr	Tyr	Gly	Gln	Asp	Gly	Gly	Trp	Ser	Ser	Trp	Thr	Lys	
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Phe	Gly	Ser	Cys	Ser	Arg	Ser	Cys	Gly	Gly	Gly	Val	Arg	Ser	Arg	Ser	
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Arg	Ser	Cys	Asn	Asn	Pro	Ser	Pro	Ala	Tyr	Gly	Gly	Arg	Pro	Cys	Leu	
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Gly	Pro	Met	Phe	Glu	Tyr	Gln	Val	Cys	Asn	Ser	Glu	Glu	Cys	Pro	Gly	
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Thr	Tyr	Glu	Asp	Phe	Arg	Ala	Gln	Gln	Cys	Ala	Lys	Arg	Asn	Ser	Tyr	
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Tyr	Val	His	Gln	Asn	Ala	Lys	His	Ser	Trp	Val	Pro	Tyr	Glu	Pro	Asp	
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Asp	Asp	Asp	Ala	Gln	Lys	Cys	Glu	Leu	Ile	Cys	Gln	Ser	Ala	Asp	Thr	Gly
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Asp	Val	Val	Phe	Met	Asn	Gln	Val	Val	His	Asp	Gly	Thr	Arg	Cys	Ser	
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Tyr	Arg	Asp	Pro	Tyr	Ser	Val	Cys	Ala	Arg	Gly	Glu	Cys	Val	Pro	Val	
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Gly	Cys	Asp	Lys	Glu	Val	Gly	Ser	Met	Lys	Ala	Asp	Asp	Lys	Cys	Gly	
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Val	Cys	Gly	Gly	Asp	Asn	Ser	His	Cys	Arg	Thr	Val	Lys	Gly	Thr	Leu	
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Gly	Lys	Ala	Ser	Lys	Gln	Ala	Gly	Ala	Leu	Lys	Leu	Val	Gln	Ile	Pro	
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Ala	Gly	Ala	Arg	His	Ile	Gln	Ile	Glu	Ala	Leu	Glu	Lys	Ser	Pro	His	
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Arg	Ser	Val	Val	Lys	Asn	Gln	Val	Thr	Gly	Ser	Phe	Ile	Leu	Asn	Pro	
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Lys	Gly	Lys	Glu	Ala	Ala	Thr	Ser	Arg	Thr	Phe	Thr	Ala	Met	Gly	Leu	Glu
											770				780	
Trp	Glu	Asp	Ala	Val	Glu	Asp	Ala	Lys	Glu	Ser	Leu	Lys	Thr	Ser	Gly	
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Pro	Leu	Pro	Glu	Ala	Ile	Ala	Ile	Leu	Ala	Leu	Pro	Pro	Thr	Glu	Gly	
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Gly	Pro	Arg	Ser	Ser	Leu	Ala	Tyr	Lys	Tyr	Val	Ile	His	Glu	Asp	Leu	
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Leu	Pro	Leu	Ile	Gly	Ser	Asn	Asn	Val	Leu	Leu	Glu	Glu	Met	Asp	Thr	
											835				845	

Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
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 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
 900 905 910
 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
 995 1000 1005
 Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
 1010 1015 1020
 His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
 1025 1030 1035 1040
 Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys
 1045 1050 1055
 Ile Ser Ser Thr Glu Pro Cys Thr Gly Asp Arg Ser Val Phe Cys Gln
 1060 1065 1070
 Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu
 1075 1080 1085
 Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro
 1090 1095 1100
 Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro
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 Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys
 1125 1130 1135
 Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro
 1140 1145 1150
 Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro
 1155 1160 1165
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 1170 1175 1180
 Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Glu
 1185 1190 1195 1200
 Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly Thr Ser Leu
 1205 1210 1215
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 <211> 4277
 <212> DNA
 <213> homo sapiens

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60
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<211> 5724
<212> DNA
<213> homo sapiens

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aaacaaaccc	acatccatgc	taggcgcage	ggcccccaga	gagaggcctc	aacaggaaagg	660
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Glu Ile Val Ser Pro Ile Arg Val Asn Ala Leu Gly Glu Pro Phe Pro
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Thr Asn Val His Phe Lys Arg Thr Arg Arg Ser Ile Asn Ser Ala Thr

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Glu His Thr Ala Val Ile Ser Leu Cys Ser Gly Met Leu Gly Thr Phe			
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